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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
GREENE JR, DANIEL LAWSON	
ART UNIT	**PAPER NUMBER**
3641	

DATE MAILED: 08/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/899,398	TIRMIZI, ABRAR	
	Examiner	Art Unit	
	Daniel L Greene Jr.	3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11-17 and 19* is/are pending in the application.

4a) Of the above claim(s) *11-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,17 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

1. The after final amendment and response filed 8/9/2004 has been fully treated. The Office acknowledges the withdrawal of claims 11-16 and cancellation of claims 10 and 18. An Office Action on the merits of claims 1-9, 17 and 19 follows.

2. Applicant's arguments, see section 3, page 10, filed 8/9/2004, with respect to the drawings and specification regarding the "engagement feature" have been fully considered and are persuasive. The objection of the drawings and specification regarding the "engagement feature" has been withdrawn.

3. Applicant's arguments, see section 2, page 10, filed 8/9/2004, with respect to the finality of the previous Office Action dated 6/14/2004 have been fully considered and are persuasive. The finality of the previous Office Action dated 6/14/2004 has been withdrawn and said Office Action vacated.

4. Applicant's arguments, see section 1, page 9, filed 8/9/2004, with respect to the allowability of subject matter held allowable in prior actions have been fully considered, however they are not persuasive. Full faith and credit has been given to the IPER issued April 2, 2004, however the Examiner has done an independent search and evaluation of the instant application, and an Office Action on the merits of claims 1-9, 17 and 19 follows. The examiners actions towards rejecting the previously allowed subject matter were proper per MPEP § 706.04.

5. The previously indicated allowability of claims 10, 18 and 19 is withdrawn in view of the newly discovered reference U.S. Patent 5,230,287 to Arrell, Jr. et al. hereafter Arrell.

6. Applicant's arguments filed 12/26/2002 have been fully considered but they are not persuasive.

7. In response to applicant's argument filed 12/26/2002, page 4, that claim 1 has been amended to limit the claim to an automotive pyrotechnic initiator, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

8. In response to applicant's argument filed 12/26/2002 on page 4 that Marshall is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, even though the Marshall patent is directed to a different field (detonators), it is still capable of being used within an automotive environment. Additionally, detonators and initiators are maintained by the office within the same

classification 102, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made, that similarities exist between detonators and initiators such that both arts benefit from the knowledge of the other. Additionally, the courts have held that a change in size/proportion is not patentably distinct when the only difference between prior art and the inventive concept is size. See MPEP § 2144.04 IV A.

9. In response to applicant's argument filed 12/26/2002 on pages 5 and 6 that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). As previously stated above, since initiators and detonators share commonalities, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify an automotive pyrotechnic initiator to include the teachings of Marshall to obtain the benefits thereof (i.e. miniaturization, protection, etc.)

10. With respect to the argument filed 12/26/2002 on page 6 concerning Marshall not needing an electrical connector, Marshall discloses in column 6 lines 43-57 that the invention can be controlled with either electric or non-electric initiation signal means further stating that "...an electrical initiation signal line may be connected to input leads 56..." See Figs. 4, 5A, and 5B. Additionally, the

transducer referenced in the argument converts pressure from a triggering shock wave to an electrical impulse which then triggers the detonator. There must be some method for this electrical impulse to be connected to and subsequently travel from the transducer. Therefore it is clear that Marshall does have a need for an electrical connector.

Election/Restrictions

11. The Office acknowledges the receipt of the Applicant's restriction election, filed 10/31/2003. Applicant elects Group I, claims 1-10 and 17-19 without traverse. Claims 1-10 and 17-19 were pending with claims 10 and 18 subsequently cancelled. Claims 11-16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. This restriction is made FINAL.

Drawings

12. The drawings are objected to because figures 1 and 2 disclose new matter not supported within the specification or claims. The addition of the 22 millimeter axial length indicator bar to Figures 1 and 2 received 12/26/2002 indicate the overall axial length of applicant's invention to be exactly 22 millimeters.

Upon further review it is noted that the new matter shown by the applicant's invention having an overall axial length of exactly 22 millimeters in the corrected figures 1 and 2 received 12/26/2002, is in response to an office action

dated 7/19/2002, therefore the requirement that the applicant show the axial length is withdrawn.

13. The withdrawal of this requirement makes the drawings received 7/5/2001 acceptable to the examiner, which concurrently eliminates the requirement of the now vacated office action dated 6/15/2004, to remove the errantly introduced "protrusion" of Figs. 1,2 and 4.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

14. **The specification is objected to under 35 U.S.C 112, first paragraph, as failing to provide an adequate written description of the invention and as failing to adequately teach how to make and/or use the invention**, i.e., failing to provide an enabling disclosure for the following reasons: The specification does not specify a lower limit to the axial length and therefore the applicants invention has an overall axial length range between 0 and less than 22 millimeters. The specification does not disclose how and in what manner applicant's invention can be manufactured near or at it's lower overall axial length limit and still be functional.

15. **Claims 1,17 and 19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention**, for the reasons set forth below.

With regard to claims 1,17 and 19, the requirement that the inventions overall axial length be "less than 22 millimeters" lacks enablement in defining how small the invention can physically be and still perform its required function. Further, the specification lacks enablement in defining how to make and/or use the invention with an overall axial length near the lower limit of the axial length range specified.

16. **Claims 1, 17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.** The phrase "the overall axial length...is less than 22 millimeters" renders the claims indefinite because the claims include elements not actually disclosed (such as the intended actual physical axial length of the invention), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(c).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

17. **Claims 1-4, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,079,332 to Marshall.**

Marshall discloses, a pyrotechnic ignition element (46) including two electrode pins (57); control circuitry (54) attached to said electrode pins; an initiator body (14C) enclosing said electrode pins and said control circuitry; and an initiator electrical interface (58) attached to said control circuitry, said interface including an exposed portion not enclosed within said initiator body, in figure 4 and column 6 lines 63-67 and column 7 lines 1-5, lines 7-12, lines 17-19, and lines 40-52.

Marshall does not expressly disclose the overall axial length measurement of the invention.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the characteristics (i.e. axial length, overall size, etc.) of the initiator to achieve an optimum result, In re Aller, 105 USPQ 233 (CCPA 1955) and In re Reese, 129 USPQ 402 (CCPA 1961).

Marshall further illustrates claims 2 and 9 in column 3 lines 35-37.

Marshall further illustrates claim 3 in figure 4 and column 7 lines 4-5 and lines 7-19.

Marshall further illustrates claims 4 and 7, output can (46B) in figure 4 and column 7 lines 17-19.

18. Claims 1-4, 7 and 9 are further rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,079,332 to Marshall in view of Arrell.

Marshall discloses applicant's invention substantially as claimed as explained above.

Marshall does not disclose expressly that the overall axial length of the pyrotechnic initiator assembly is less than 22 millimeters.

Arrell teaches the typical size of variously used squibs (aka. initiators) to be 0.2 to 0.5 inches in each dimension in column 1 lines 50-55.

Converting 0.2 and 0.5 inches to millimeters results in 5.08 millimeters and 12.7 millimeters respectively.

Marshall and Arrell are analogous art for the reasons previously explained above.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to alter the size of Marshall as taught in Arrell in order to gain the advantages thereof (i.e., miniaturization, or to use the same device in alternate applications), as such results are in no more than the use of conventionally known designs/techniques/sizes available within the art.

Marshall further illustrates claims 2 and 9 in column 3 lines 35-37.

Marshall further illustrates claim 3 in figure 4 and column 7 lines 4-5 and lines 7-19.

Marshall further illustrates claims 4 and 7, output can (46B) in figure 4 and column 7 lines 17-19.

19. **Claims 5, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall as modified by Arrell above and further in view of Hsu.**

Marshall as modified and explained above substantially discloses the invention as claimed in figure 4 and column 3 lines 35-37 and column 7 lines 9-12 and lines 17-19. That the pyrotechnic ignition element (46) is comprised of a semiconductor bridge element, which is connected to two electrode pins (57), and is enclosed within an output can (46B) having a flared bottom, which contains an initiation charge, and is enclosed within the molded initiator body. Marshall does not expressly disclose an insulator cup that has a flared bottom, which is enclosed within the molded initiator body (14C).

Hsu teaches in figure 2 and column 2 lines 54-56, that the insulator cup (40) has an outward bottom flange, which is enclosed within the molded initiator body (12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Hsu's method of attaching an insulator cup in order to gain the advantages thereof (i.e., to design a pyrotechnic initiator assembly with greater degree of stability.)

20. **Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall as modified by Arrell above and further in view of Cunningham.**

Marshall as modified above substantially discloses the pyrotechnic initiator assembly as claimed. Marshall does not expressly disclose the mating connector, as claimed by the applicant. Cunningham discloses a mating connector body (160), including an enlarged initiator opening (178) defined therein, and a bus wire (110) and (112) and a bus wire electrical interface (118)

and (120), in figures 9 and 19-21, column 7 lines 44-52 and lines 53-58 and column 11 lines 1-7.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Marshall's pyrotechnic initiator assembly with Cunningham's mating connector in order to gain the advantages thereof (i.e., to design a pyrotechnic initiator that would be protected against radiant energy interference.)

21. With regard to claim 19, Marshall as modified above, discloses the pyrotechnic initiator assembly substantially as claimed. Marshall does not expressly disclose an engagement feature formed to snugly hold the initiator body in place. Cunningham teaches an engagement feature in column 11 lines 14-19.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Marshall's pyrotechnic initiator assembly with Cunningham's mating connector in order to gain the advantages thereof (i.e., to provide for easy insertion and snug fit of the connector.)

While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F .2d 1069, 173 USPQ 25 (1972)

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents show the state of the art in the field of Pyrotechnic Initiators.

U.S. Patent No. 6,341,562 B1 to Brisighella

U.S. Patent No. 6,227,115 B1 to Gruber et al.

U.S. Patent No. 5,955,699 to Perotto et al.

Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L Greene Jr. whose telephone number is (703) 605-1210. The examiner can normally be reached on Mon-Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J Carone can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

24. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DIG 8/23/2004

MICHAEL J. CARONE
SUPERVISORY PATENT EXAMINER